

We Claim:

1. A method comprising:

at times providing video frames of a performance at a slower input rate;

5 at other times providing video frames of the performance at a faster input rate;

switching a video display to display frames in first display scan mode when

receiving frames at the slower input rate; and

switching the video display to display frames in a second display scan mode when

receiving frames at the faster input rate, the second display scan mode being different than

10 the first display scan mode.

2. The method of claim 1, wherein: the slower input rate is equal to a normal play rate of the video performance, and the faster play rate is for a fast motion trick mode.

15 3. The method of claim 1 wherein the frames received in both the slower and faster input rate are in a progressive scan format; the first display scan mode is a 25Hz or 30Hz progressive scan mode; and the second display scan mode is a 50Hz or 60Hz progressive scan mode.

20 4. The method of claim 1 wherein: the frames received in both the slower and faster input rate are in a 2X interlaced scan format; the first display scan mode is a 50Hz or 60Hz 2X interlaced scan mode; and the second display scan mode is a 100 Hz or 120Hz 2X interlaced scan mode.

25 5. The method of claim 1 further comprising repeating the display of frames received at the slower input rate to provide a required frame rate for the first display scan mode.

6. The method of claim 1 further comprising dropping some of the frames received at the higher input rate to provide a required frame rate for the second display scan mode.

5 7. The method of claim 1 further comprising combining frames received at a faster input rate into combined frames to provide a required frame rate for the second display scan mode.

8. The method of claim 1, wherein:

10 the method further comprises detecting the input rate; and
automatically selecting the display scan mode depending on the detected input rate.

9. The method of claim 1, wherein:

15 the method further comprises receiving a user input command to change the input rate; and

changing the input rate in response to the user input command to change the input rate.

20 10. The method of claim 1, wherein:

the method further comprises receiving a user input command to change the input rate; and

changing the display scan mode in response to the user input command to change the input rate.

25 11. The method of claim 1, wherein the received frames are provided by a medium player that provides video frames at a controllable average input rate.

12. The method of claim 11, wherein the medium player is selected from a DVD drive, a digital VCR, and a magnetic disc drive.

5 13. The method of claim 11, wherein the medium player includes user input apparatus for providing a command to change the average input rate.

14. The method of claim 1, wherein the display is a CRT and the different display scan modes are selected from: a progressive scan 30Hz mode, a progressive scan 60Hz mode, a
10 2X interlaced 60 Hz mode, a 2X interlaced 120Hz mode, a 4X interlaced 120Hz mode and a 4X interlaced 240Hz mode.

15. The method of claim 1, wherein:
the display is a CRT and the different display scan modes are selected from: a
15 progressive scan 25Hz mode, a progressive scan 50Hz mode, a 2X interlaced 50 Hz mode, a 2X interlaced 100Hz mode, a 4X interlaced 100Hz mode and a 4X interlaced 200Hz mode.

16. A method comprising:
20 at times providing video frames at a slower input rate;
displaying the frames received at the slower input rate;
at other times providing video frames at a higher input rate;
combining the frames received at the higher input rate into combined frames at the
slower frame rate; and
25 displaying the combined frames at the slower frame rate.

17. The method of claim 16 wherein multiple frames with a progressive scan format are combined by combining some of the lines of each frame together to form a combined frame with a progressive scan format.

5 18. The method of claim 17 wherein n frames are combined using every n th line of each of the n frames to form the combined frame, every n th line beginning at a different line for each different frame.

19. The method of claim 18 wherein a pair of frames are combined by combining the
10 odd lines of one frame with the even lines of the other frame.

20. The method of claim 16 wherein multiple frames with a progressive scan format are combined by dropping lines of each frame to form a combined frame with an interlaced format.

15 21. The method of claim 20 wherein n frames are combined by dropping all the lines except every n th line of each frame, every n th line beginning at a different line position in each different frame of the n frames.

20 22. The method of claim 16 wherein multiple frames with an interlaced format are combined by dropping one or more fields of each frame to form a combined frame with an interlaced format.

23. The method of claim 22 wherein a different field from each frame is combined to
25 form the combined frame.

24. The method of claim 16 wherein multiple frames with an interlaced scan format are combined by dropping lines of each frame to form a combined frame of interlaced format.

25. The method of claim 24 wherein n frames are combined by dropping all the lines except every nth line of each field, every nth line beginning at a different line position in each different frame of the n frames.

26. The method of claim 16 wherein the slower input rate has the same frame rate as the slower frame rate.

27. A video player comprising:

a display device (132) having multiple fixed predetermined display scan modes with corresponding display rates that are independent of the average frame input rate and selectable at least between: a first display scan mode and a second display scan mode that is substantially different than the first display scan mode;

an input (122) for video frames of a video program with an predetermined standard average input rate that is selectable at least between: a slower average input rate and a faster average input rate that is substantially different than the slower input rate; and

means (136) for selecting the first display scan mode when receiving frames at the slower input rate and for selecting the second display scan mode when receiving frames at the faster input rate.

28. The video player of claim 18, wherein the slower input rate is equal to a normal play rate of the video performance, and the faster play rate is for a fast motion trick mode.

29. The video player of claim 18, wherein: the frames received in both the slower and faster input rate are in a progressive scan format; the first display scan mode is a 25Hz or

30Hz progressive scan mode; and the second display scan mode is a 50Hz or 60Hz progressive scan mode.

30. The video player of claim 18, wherein: the frames received in both the slower and
5 faster input rate are in a 2X interlaced scan format; the first display scan mode is a 50Hz or 60Hz 2X interlaced scan mode; and the second display scan mode is a 100 Hz or 120Hz 2X interlaced scan mode.

31. The video player of claim 18, wherein the received video player further comprises
10 means (128) for converting the video frames including repeating the display of frames received at the slower input rate to provide a required frame rate for the first display scan mode.

32. The video player of claim 18, wherein the video player further comprises means
15 (128) for converting the received video frames including dropping some of the frames received at the higher input rate to provide a required frame rate for the second display scan mode.

33. The video player of claim 18, wherein the video player further comprises means for
20 converting the received video frames including combining frames received at a faster input rate into combined frames to provide a required frame rate for the second display scan mode.

34. The video player of claim 18, wherein the video player further comprises means
25 (136) for detecting the input rate; and the selecting means selects the display scan mode depending on the detected input rate.

35. The video player of claim 18, wherein:

the video player further comprises a user input (126, 150) for providing a command to change the input rate; and

means (142) for changing the input rate in response to the user input command to

5 change the input rate.

36. The video player of claim 18, wherein:

the video player further comprises a user input (126) for providing a command to change the input rate; and

10 means (142) for changing the display scan mode in response to the user input command to change the input rate.

37. The video player of claim 29, wherein the video player further comprises a video

medium reader (124) for providing the video frames of a video program with a controllable

15 average input rate.

38. The video player of claim 30, wherein the video medium reader player is selected

from a DVD drive, a digital VCR, and a magnetic disc drive.

20 39. The video player of claim 30, wherein the video medium player includes a user

input for providing a command to change the average input rate.

40. A display device comprising:

a video display for displaying video frames at one of a multitude of different

25 predetermined display scan rates;

a user input device for selecting a frame rate and a corresponding display scan mode of the video device from among multiple different predetermined display scan modes, the video frame display rate of the display device depending on the display scan mode; and

- 5 a transmitter to transmit the selected frame rate to a video source to provide frames at an average rate depending on the selection.